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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,387	03/28/2001	Steve Wai Leung Yeung	25821P031	3593

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EXAMINER

KUMAR, SRILAKSHMI K

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/821,387

Applicant(s)

YEUNG, STEVE WAI LEUNG

Examiner

Srilakshmi K. Kumar

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5 and 6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The following is in response to the amendment filed on December 18, 2006. Claims 1-3, 5 and 6 are pending with claims 1 and 5 currently amended and claim 4 is cancelled.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirakata (US 6,496,172).

As to independent claim 1, Hirakata discloses a method for driving an LCD including providing an LCD with a plurality of column lines (signal line 1 to signal line 6), a plurality of rows (scanning line A to scanning line D), and a plurality of pixels (111). Hirakata teaches a well known driving the LCD by a multiple pixel inversion technique (e.g., frame inversion shown in Fig. 15A) providing a plurality of pixel matrices of $n \times m$ pixels in both the scan line and column line directions (Figs. 15-17), where n and m are greater than 1 (Figs. 15-17); applying signals of a first polarity to every second pixel matrix in both the scan line and column line directions (Figs. 17A & B, shows where the first and third pixel matrix has the same polarity, col. 10, lines 47-55), applying signals of a second polarity to the remaining pixel matrices (in Figs. 17 A & B, where the second and fourth are the opposite polarity); and simultaneously inverting the polarities provided to said every second pixel matrix and said remaining pixel

Art Unit: 2629

matrices (shown by going from Fig. 17 A to Fig. 17 B where the polarities are reversed), wherein a reduced total fringe field effect to maintain contrast and a minimized flickering display is provided (i.e. tone of a display image is clear, the flicker does not become noticeable at about 60Hz) (see column 9, lines 1-6). Thus, the inversion method of Figures 15 and 17 of Hirakata read on the claimed minimized display flickering and reduced fringe field effect even driving at 30Hz frequency. The claim does not require 60 Hz frequency driving. It reads on broad claim language.

As to dependent claim 2, limitations of claim 1, and further comprising, Hirakata discloses wherein multiple inversions are adjustable (Figs. 15). The claim "multiple inversion are adjustable" is broad enough to read on the frame inversion of Hirakata either positive or negative in a whole frame in Fig. 15A or inversion each gate line in each frame in Fig. 15B.

As to dependent claim 3, limitations of claim 1, and further comprising, Hirakata clearly teaches the method being applied to one of an actively driven miniature TFT LCD and a reflective liquid crystal on silicon LCD (i.e. camera, cell phone, see Figs. 22A-F).

As to dependent claim 6, limitations of claim 1, and further comprising, Hirakata discloses wherein multiple pixel inversion is applied for two or more consecutive frames as shown in Fig. 15A.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirakata as applied to claim 1, above, and further in view of Kim (US-PGPUB 2001/0015716).

As to dependent claim 5, Hirakata does not disclose wherein $n=m=2$. Kim teaches in Fig. 6a and 6b, and paragraphs 0051-0053, where the pixels are in pixel groups and where the pixel groups alternate between positive and negative polarity. Kim further teaches while the embodiment shown is 3, the number of pixels in the pixel group is not limited to three (paragraph 0061). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include pixel groups of where $n=m=2$ as taught by Kim into the prior art of Hirakata as Kim teaches in paragraph 0032, with this method, the defects to the pixels caused by the short of one or two is prevented.

Response to Arguments

5. Applicant's arguments filed December 18, 2006 have been fully considered but they are not persuasive.

Applicant argues where the prior art Hirakata does not disclose "a multiple pixel inversion technique comprising; applying signals of a same polarity to a portion of $n \times m$ pixel matrix". Examiner, respectfully, disagrees. Hirakata discloses in col. 9, lines 42-61 and col. 10, lines 47-55 wherein the same polarity is applied to a portion of $n \times m$ pixels, i.e. to pixels in columns 1 and 2 and 5 and 6. This teaches where the second Therefore the prior art Hirakata discloses where the same polarity is applied to a portion of $n \times m$ pixels. Thus, the rejection of the claims set forth in the instant application is maintained. The prior art of Hirakata reads on the applicant's claimed invention. With respect to claim 5, where Hirakata does not teach where

Art Unit: 2629

n=m=2, this is taught by Kim as disclosed in the rejection above. Therefore, the prior art of Hirakata in view of Kim teach the limitations set forth in the instant application.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srilakshmi K. Kumar whose telephone number is 571 272 7769. The examiner can normally be reached on 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571 272 3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Srilakshmi K. Kumar
Examiner
Art Unit 2629

SKK
March 16, 2007



SUMATI LEFKOWITZ
SUPERVISORY PATENT EXAMINER